

1. (Withdrawn) A procedure device capsule for transport of the intraluminal procedure device to a vascular, cardiac or other intraluminal situs which when inserted in the lumen of a blood vessel in the presence of blood flow comprises: one layer comprising a tubular flexible substrate means having a generally cylindrical outside surface and a generally cylindrical inside surface characterized as capable of transporting the intraluminal procedure device to said situs.

2. (Withdrawn) An intraluminal procedure device for performance of intravascular or intracardiac or other intraluminal procedures at a situs which when inserted in the lumen of a host blood vessel in the presence of blood flow comprises: a layer and a tube, wherein: i) said layer, the barrier, comprising a durable flexible selectively permeable umbrella-like conical shaped substrate means with the conical end perforate and pointing downstream in the host blood vessel and the distal ends segmented into at least two segments to allow for differential expansion and contraction of the segments, characterized as capable of passage through said host blood vessel to a vascular or cardiac or other intraluminal situs and of differentially expanding said distal ends to attach to the walls of and stabilize at said situs, at a determined angle and for a determined length of time, allowing blood flow through said permeable substrate means preventing back pressure and embolization, and providing a working procedure region within the area confined by the inside of said barrier, and ii) said tube, the working channel, comprising an elongated tubular durable flexible substrate means having a generally cylindrical outside surface and a generally cylindrical inside surface which distal open end is attached at said situs of the perforation at the conical end of said barrier and which proximal end extends out the external entry to said host blood vessel, characterized as allowing external entry and utilization of instruments at said situs through passage of said instruments through said working channel, through the perforate conical end of said barrier and into the procedure working region.

3. (Withdrawn) A tissue cutter for removal of undesired tissue within the vascular or cardiac system or other anatomic lumens which when inserted into the intraluminal procedure device comprises: at least one blade and a cable, wherein i) said at least one blade comprising

a collapsible blade, and characterized as capable of passage through a host blood vessel to a vascular or cardiac situs while collapsed within a working channel and then entry into the procedure working region, which when within the procedure working region comprises: at least one collapsible sharp blade having at least one hinge mechanism allowing for collapsing and expansion and attached to zero or more other blades at varying angles to provide cutting surfaces at various angles, with said collapsible blade connected to ii) said cable which when within the working channel comprises: an elongated durable flexible wire which extends to the exterior of the host through the working channel, said cable characterized as capable of connection to an outside motor, and of controlling the speed of rotation of the blade(s).

4. (Withdrawn) The tissue cutter according to claim 3 wherein the proximal blade comprises a flexible wire capable of high speed rotation.

5. (Withdrawn) A valve introducer device for inserting a prosthetic valve device at a vascular, or cardiac situs which when inserted in the lumen of a blood vessel in the presence of blood flow comprises: a layer, a tube, a pusher device and a bracer, wherein i) said layer, the introducer capsule, comprising a tubular flexible substrate means having a generally cylindrical outside surface and a generally cylindrical inside surface and reinforced at the proximal end which is open, and having a semi-closed distal end with a perforate opening having a diameter approximately the same as the internal diameter of the tube, characterized as capable of transporting said prosthetic valve device to said situs, ii) said tube, the introducer channel, comprising an elongated tubular durable flexible substrate means having a generally cylindrical outside surface and a generally cylindrical inside surface which proximal open end is attached at said situs of the distal opening of said introducer capsule and which distal end extends out the external entry of said blood vessel, and is characterized as containing a pusher channel of a pusher device within its lumen, iii) said pusher device comprising a disc and a tube, said disc of said pusher device comprising a generally circular disc, with a generally flat distal surface, a generally flat proximal surface and a central opening, and made of a durable, flexible material, having its proximal surface abut said prosthetic valve device contained within said introducer capsule, and attached at said central opening of its distal surface is said proximal end of said tube, which comprises: an elongated

flexible cylinder made of durable, flexible, non-thrombogenic material, having a generally cylindrical outside surface and a generally cylindrical inside surface and a smaller internal diameter than that used in said introducer channel, and is characterized as capable of maintaining its structural integrity such that it does not distort upon the application of external pressure, of being contained within the lumen of said introducer channel with its distal end extending beyond the vascular entry point via said introducer channel, of allowing passage of a mounting balloon and guide wire, and of advancing within the lumen of said introducer channel, upon application of external pressure to advance said pusher disc, and thereby said prosthetic valve device within said introducer capsule, and iv) said bracer, comprising a differentially expandable device circumferentially attached to the external surface of said introducer capsule at said capsule's proximal end and is characterized as having the capability of expanding to hold said introducer capsule in a precise position during delivery of said prosthetic valve device.

6. (Withdrawn) A prosthetic valve device for supplanting or replacing a cardiac valve which when inserted in the lumen of a blood vessel, in extra-anatomic conduits or at a cardiac valve annulus situs in the presence of blood flow comprises: a sleeve, a valve and an annulus, wherein i) said sleeve comprises a tubular flexible substrate means having a generally cylindrical outside layer secured to (ii) said compressible annulus at its base comprising a mounting ring by a series of mounting pins, and a generally cylindrical inside surface contacting an inner layer comprising (iii) said valve, characterized as capable of insertion into a cardiac or vascular situs through a host blood vessel, host compatible and capable of autonomous operation, which when inserted in said situs in the presence of blood flow comprises a flexible annulus having a generally cylindrical outside surface and a generally cylindrical inside surface containing at least one cusp to permit blood flow through said cusp in a single direction; iv) attachment means comprising at said first and second open ends of said cusp to permit fixation of said device at least at or above said annulus of said dysfunctional valve by the mounting ring which comprises; v) a flexible annulus having a generally cylindrical inside surface and a generally cylindrical outside surface containing a series of mounting pins to fixate said prosthetic valve device at said situs.

7-8. (Cancelled)

9. (Withdrawn) A mounting ring to fixate an attached device at a situs characterized as capable of insertion into a cardiac or vascular situs through a host blood vessel, host compatible and capable of autonomous operation, which when inserted in said situs in the presence of blood flow comprises: a flexible annulus having a generally cylindrical outside surface and a generally cylindrical inside surface containing a series of mounting pins to fixate said attached device at the said situs.

10. (Withdrawn) A valve replacement system for supplanting or replacing a cardiac valve which when inserted in the lumen of a blood vessel, in extra-anatomic conduits or at a cardiac valve annulus situs in the presence of blood flow comprises: a procedure device capsule, an intraluminal procedure device, a tissue cutter, a valve introducer device, and a prosthetic valve device.

11. (Withdrawn) A method for replacing a cardiac or other valve or prosthesis endovascularly which method comprises: a procedure device capsule contains and transports a intraluminal procedure device endovascularly, through surface insertion of and passage through the host's vasculature, to a valve situs whereby a barrier of said intraluminal procedure device exits from said procedure device capsule, expands in a controlled and adjustable manner, abuts the lumen of the vessel, and encircles the valve situs, and upon which: a tissue cutter travels through a working channel of said intraluminal procedure device to said valve situs and upon arrival at said situs cuts and removes the old valve, prosthesis or other designated tissue, and any resulting loose matter is trapped by said barrier or is removed from the host's vasculature through suction and other tissue retrieval device inserted via said working channel, and upon removal of said old valve, prosthesis or other tissue: said barrier is contracted, said intraluminal procedure device is withdrawn and secured into said procedure device capsule which is then removed, and a valve introducer device containing a prosthetic valve device transports said prosthetic valve to said valve situs via endovascular means, and upon reaching said valve situs: said valve introducer device's bracer expands to

position said valve introducer device correctly for insertion of said prosthetic valve device at said valve situs, a pusher device of said valve introducer device advances to expel said prosthetic valve device from said introducer capsule, upon which a balloon which has been introduced by a guide wire via a pusher channel of said pusher device, is inflated at the situs to securely mount said prosthetic valve device, and upon secure fixation of said prosthetic valve device at said situs: said bracer is contracted, said balloon deflated, and said valve introducer device, said balloon and said guide wire are removed from said host's vasculature.

12. (Withdrawn) A method of supplanting a cardiac or other valve or prosthesis endovascularly which method comprises: a valve introducer device containing a prosthetic valve device transports it to a valve fixation situs endovascularly, through surface insertion of and passage through the host's vasculature, to the fixation situs and upon reaching the fixation situs: a valve introducer device's bracer expands to position said valve introducer device correctly for insertion of said prosthetic valve device at said valve situs, a pusher device of said valve introducer device advances to expel a prosthetic valve device from an introducer capsule, upon which a balloon which has been introduced by a guide wire via a pusher channel of said pusher device, is inflated at said situs to securely mount said prosthetic valve device, and upon secure fixation of said prosthetic valve device at said situs: said bracer is contracted, said balloon deflated, and said valve introducer device, said balloon and said guide wire are removed from said host's vasculature.

13. (Withdrawn) A method of use extracting host valves or tissue endovascularly which method comprises: a procedure device capsule contains and transports an intraluminal procedure device endovascularly, through surface insertion of and passage through a host's vasculature, to a situs for removal whereby a barrier of said intraluminal procedure device exits from said procedure device capsule, expands in a controlled and adjustable manner, abuts the lumen of said host vessel, and encircles said removal situs, and upon which: a tissue cutter travels through a working channel in said procedure device to said removal situs and upon arrival at said situs cuts and removes the old valve, prosthesis or other designated tissue, and any resulting loose matter is trapped by said barrier or is removed from said host's vasculature through suction and other tissue retrieval device inserted via said working

channel, and upon removal of said old valve, prosthesis or other tissue, said barrier is contracted, said intraluminal procedure device is withdrawn into and secured in said procedure device capsule, which is then removed.

14. (Withdrawn) A method of emboli free endovascular procedures which method comprises: a procedure device capsule contains and transports an intraluminal procedure device endovascularly, through surface insertion of and passage through a host's vasculature, to a situs for procedure whereby a barrier of said intraluminal procedure device exits from said procedure device capsule, expands in a controlled and adjustable manner, abuts the lumen of said vessel, and encircles said procedure situs, and upon which: a procedure instrument travels through a working channel in said procedure device to said procedure situs and upon arrival at said situs performs its specific task, and any resulting loose matter is trapped by said barrier or is removed from said host's vasculature through suction and other tissue retrieval device inserted via said working channel, and completion of said procedure and removal of all said procedure instruments through said working channel, said barrier is contracted, and said intraluminal procedure device is withdrawn into and secured in said procedure device capsule, which is then removed.

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15. (New) A valve for implantation at a desired location within a mammal, comprising:  
a flexible sleeve; and  
at least one cusp configured to permit blood flow through the at least one cusp in a single direction, the valve being capable of insertion to the desired location via a catheter.

16. (New) The valve of claim 15, wherein the sleeve has a proximal end and a distal end, and the at least one cusp comprises three cusps attached at the distal end of the sleeve, the three cusps configured to open to permit blood to flow through the distal end when subjected to blood flow through the sleeve from the proximal end to the distal end.


17. (New) The valve of claim 16, wherein the three cusps are configured to open in a distal direction when subjected to blood flow through the sleeve from the proximal end to the distal end.

18. (New) The valve of claim 16, wherein the three cusps are configured to close to prevent blood flow through the sleeve from the distal end to the proximal end.


19. (New) The valve of claim 16, wherein the valve is configured to have an open position that permits blood to flow through the distal end when blood flows through the sleeve from the proximal end to the distal end and a closed position to prevent blood from flowing from the distal end to the proximal end of the sleeve.

20. (New) The valve of claim 19, wherein each of the three cusps has at least one side and each of the three cusps are configured to mate along the at least one side with a side of a cusp located adjacent to each of the three cusps when the valve is in the closed position.

21. (New) The valve of claim 15, comprising a mounting ring attached to the sleeve at the proximal end.



22. (New) The valve of claim 21, wherein the sleeve has an outer surface and the mounting ring is attached to the outer surface.



23. (New) The valve of claim 21, wherein the mounting ring is compressible.

24. (New) The valve of claim 21, wherein the mounting ring is expandable from a first diameter to a larger, second diameter.

25. (New) The valve of claim 21, wherein the mounting ring comprises at least one fastener for attaching the valve at a desired location.

26. (New) The valve of claim 25, wherein the at least one mounting pin comprise a series of fasteners arranged circumferentially about the mounting ring.

27. (New) The valve of claim 25, wherein the mounting ring has a longitudinal axis and the at least one fastener comprises at least one mounting pin attached to the mounting ring, the mounting pin having two ends offset from one another in the longitudinal direction.


28. (New) The valve of claim 27, wherein the two ends of the at least one mounting pin extend radially outward from the mounting ring.

29. (New) The valve of claim 24, wherein the mounting ring is balloon expandable.

30. (New) The valve of claim 15, wherein the sleeve and cusp are formed of different materials.

31. (New) The valve of claim 15, wherein the at least one cusp comprises one of a homogenic material, an allogenic material and a xenogenic material.

32. (New) The valve of claim 15, wherein the at least one cusp comprises a synthetic material.



32. A valve device for implantation at a desired location within a mammal, comprising:  
a mounting ring expandable from a first diameter to a second diameter; and  
a valve having a proximal end and a distal end, the valve attached to the mounting ring at the proximal end, the valve comprising at least one cusp configured to permit blood flow through the at least one cusp in a single direction.

33. (New) The valve device of claim 32, wherein the valve comprises three cusps attached at a distal end of the valve, the three cusps configured to open and permit blood to flow through the distal end when the cusps are subjected to blood flow through the valve the proximal end to the distal end.



34. (New) The valve device of claim 33, wherein the valve comprises a sleeve having a first end and a second end, the sleeve attached to the mounting ring on the first end and attached to the three cusps on the second end.

35. (New) The valve device of claim 32, wherein the valve device is capable of being positioned at the desired location via a catheter.

36. (New) The valve device of claim 32, comprising a guidewire for guiding the valve device to a desired location.

37. (New) The valve device of claim 32, comprising a catheter upon having a balloon attached at the distal end of the catheter, the mounting ring and valve being mounted on the balloon.

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